10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.622.0609

POLD1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP2867c

Specification

POLD1 Antibody (Center) - Product Information

Application	**WB, FC,E**
Primary Accession	P28340
Other Accession	P52431
Reactivity	**Human**
Predicted	**Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit Ig**
Calculated MW	**123631**
Antigen Region	**710-739**

POLD1 Antibody (Center) - Additional Information

Gene ID 5424

Other Names
DNA polymerase delta catalytic subunit, DNA polymerase subunit delta p125, POLD1, POLD

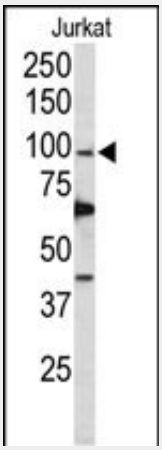
Target/Specificity
This POLD1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 710-739 amino acids from the Central region of human POLD1.

Dilution
WB~~1:1000
FC~~1:10~50

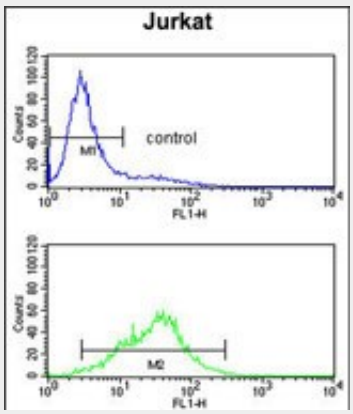
Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions



Western blot analysis of POLD1 Antibody (Center) (Cat. #AP2867c) in Jurkat cell line lysates (35ug/lane). POLD1 (arrow) was detected using the purified Pab.



POLD1 Antibody (Center) (Cat. #AP2867c) flow cytometry analysis of Jurkatcells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

POLD1 Antibody (Center) - Background

The DNA polymerase delta complex is involved in DNA replication and repair, and it consists of the proliferating cell nuclear antigen (PCNA), the multisubunit replication

POLD1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

POLD1 Antibody (Center) - Protein Information

Name POLD1 (HGNC:9175)

Synonyms POLD

Function
As the catalytic component of the trimeric (Pol-delta3 complex) and tetrameric DNA polymerase delta complexes (Pol-delta4 complex), plays a crucial role in high fidelity genome replication, including in lagging strand synthesis, and repair. Exhibits both DNA polymerase and 3'- to 5'-exonuclease activities (PubMed:16510448, PubMed:19074196, PubMed:20334433, PubMed:24035200, PubMed:24022480). Requires the presence of accessory proteins POLD2, POLD3 and POLD4 for full activity. Depending upon the absence (Pol-delta3) or the presence of POLD4 (Pol-delta4), displays differences in catalytic activity. Most notably, expresses higher proofreading activity in the context of Pol-delta3 compared with that of Pol-delta4 (PubMed:19074196, PubMed:20334433). Although both Pol-delta3 and Pol-delta4 process Okazaki fragments in vitro, Pol-delta3 may be better suited to fulfill this task, exhibiting near-absence of strand displacement activity compared to Pol-delta4 and stalling on encounter with the 5'-blocking oligonucleotides. Pol-delta3 idling process may avoid the formation of a gap, while maintaining a nick that can be readily factor C, and the 4 subunit polymerase complex: POLD1, POLD2, POLD3, and POLD4.

POLD1 Antibody (Center) - References

Chung D.W., Zhang J.,Proc. Natl. Acad. Sci. U.S.A. 88:11197-11201(1991)
Yang C.-L., Chang L.-S.Nucleic Acids Res. 20:735-745(1992)
Li H., Xie B., Zhou Y., Rahmeh A.J. Biol. Chem. 281:14748-14755(2006)

ligated (PubMed:24035200). Along with DNA polymerase kappa, DNA polymerase delta carries out approximately half of nucleotide excision repair (NER) synthesis following UV irradiation (PubMed:20227374). Under conditions of DNA replication stress, in the presence of POLD3 and POLD4, may catalyze the repair of broken replication forks through break-induced replication (BIR) (PubMed:24310611). Involved in the translesion synthesis (TLS) of templates carrying O6-methylguanine, 8oxoG or abasic sites (PubMed:19074196, PubMed:24191025).

Cellular Location
Nucleus Note=Colocalizes with PCNA and POLD3 at S phase replication sites (PubMed:11595739). After UV irradiation, recruited to DNA damage sites within 2 hours, independently on the cell cycle phase, nor on PCNA ubiquitination. This recruitment requires POLD3, PCNA and RFC1- replication factor C complex (PubMed:20227374, PubMed:22801543)

Tissue Location
Widely expressed, with high levels of expression in heart and lung.

POLD1 Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture